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Ferronickel — Specification and delivery requirements

Ferro-nickel — Spécifications et conditions de livraison

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

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Ferronickel — Specification and delivery requirements

1 Scope

This International Standard specifies the technical delivery requirements for the various forms of ferronickel (ingots, pieces and shot) usually supplied for steel making and foundry use.

2 Definition

ferronickel: A master alloy of iron and nickel having a nickel content equal to or greater than 15 % (m/m), and less than 80 % (m/m), obtained from oxide ores or other nickel-bearing materials.

3 Information for ordering

Orders for ferronickel shall include the following information:

a) quantity;

b) chemical composition, according to the designations in the table;

c) form of delivery, according to 4.2;

d) requirements for analysis reports, packing, etc., as appropriate.

4 Requirements

4.1 Chemical composition

4.1.1 The chemical compositions of the various types of ferronickel are specified in table 1.

4.1.2 In table 1, only the main constituent elements and usual impurities are given.

If the purchaser requires closer ranges for the main element contents and/or different limits for specified elements, and/or limits for non-specified elements, and/or if the contents of elements such as arsenic, bismuth, lead, antimony and tin each exceed 0,010 % (m/m), this shall be indicated and agreed upon between supplier and purchaser.

4.1.3 The chemical compositions given in table 1 are subject to the precision of the methods of sampling and analysis for ferronickel.

4.2 Form of delivery and formation of lots

Ferronickel may be delivered as agreed between the supplier and the purchaser in various forms, e.g: ingots, pieces or shot. The delivered lots, except by special agreement, shall have a minimum tonnage of 5 t.

4.2.1 Ferronickel in ingots

Ingots may be supplied notched or unnotched. Their maximum mass is 100 kg; their thickness may be within a range of 30 to 150 mm and their length shall not exceed 1 100 mm.

Lots may be formed in two different ways:

— from material stocked individually from each tapping operation;

— by blending several heats; in this case, except by special agreement, heats shall be selected in a nickel content range from K to $(K + 1)$ %, K being a whole number.

4.2.2 Ferronickel in pieces

Pieces are either cast or cut from ingots. A lot is formed from only one of these two categories of pieces. The maximum dimension is between 25 and 100 mm. Within a lot, the sizes of pieces shall be uniform.

Lots may be formed in two different ways:

— from material stocked individually from each tapping operation;

— by blending several heats; in this case, except by special agreement, heats shall be selected in a nickel content range from K to $(K + 1)$ %, K being a whole number.

4.2.3 Ferronickel in the form of shot

The size of the shot obtained by shotting of liquid material is within a range of 2 to 50 mm.

If so agreed between supplier and purchaser, the ferronickel shot may be delivered after drying.